CLAIMS

What is claimed is:

1   1. A method in a communication network for processing
2   communication from a general processor to a network
3   processor, said method comprising:

4   encapsulating an informational frame into an
5   encapsulated packet for transmission from a general
6   processor to a network processor having a data processor
7   and a control processor; and

8   in response to the informational frame being a
9   control frame and the control processor being congested,
10 designating the encapsulated packet as a data-type packet
11 for processing by the data processor.

1   2.   The method according to Claim 1, further comprising:

2   sending the encapsulated packet from the general

3   processor to the network processor.

1   3.   The method according to Claim 2, further comprising:

2   decapsulating, by the data processor, the

3   encapsulated packet and parsing the control frame; and

4   processing, by the data processor, the control frame.

1   4.   The method according to Claim 3, wherein processing,

2   by the data processor, the control frame further

3   comprises:

4   directing and executing, by the data processor, a

5   control command defined within the control frame to a

6   target control processor of a target network processor

7   designated within the encapsulated packet.

1   5.   The method according to Claim 1, further comprising:

2   in response to the informational frame being a

3   control frame and the control processor being available

4   for processing the control frame, designating the

5   encapsulated packet as a control-type packet for

6   processing by the control processor;

7   in response to the informational frame being a data

8   frame, designating the encapsulated packet as a data-type

9   packet for processing by the data processor; and

10   in response to the informational frame being a data

| 11 | and control frame, designating the encapsulated packet as |
| 12 | a data- type packet for processing by the data processor. |

1	6. The method according to Claim 1, wherein the
2	encapsulated packet further comprises a destination
3	address field, a source address field, an informational
4	type field, a control- point type field, a target
5	processor field, and the informational frame.

1   7. A method within a communication network for processing
2   communication from a general processor to a network
3   processor, said method comprising:

4   receiving and decapsulating, by a network processor
5   having a data processor and a control processor, an
6   encapsulated packet into an informational frame; and

7   in response to the encapsulated packet being
8   designated as a data-type packet and the informational
9   frame being a control frame, processing the control frame
10   by the data processor.

1 8.   The method according to Claim 7, wherein receiving
2 and decapsulating an encapsulated packet further
3 comprising:

4   parsing, by the data processor, the control frame
5 from the encapsulated packet.

1 9.   The method according to Claim 7, wherein processing
2 the control frame by the data processor further comprises:

3   directing and executing, by the data processor, a
4 control command defined within the control frame to a
5 target control processor of a target network processor
6 designated within the encapsulated packet.

1 10. The method according to Claim 7, further comprising:

2   in response to the encapsulated packet being
3 designated a control-type packet and the informational
4 frame being the control frame, processing the control
5 frame by the control processor;

6   in response to the encapsulated packet being
7 designated a data-type packet and the informational frame
8 being a data frame, processing the data frame by the data
9 processor; and

10   in response to the encapsulated packet being
11 designated a data-type packet and the informational frame
12 being a data and control frame, processing the data and
13 control frame by the data processor.

1   11. A system for processing network communication,
2   comprising:

3   a general processor that encapsulates an
4   informational frame into an encapsulated packet for
5   transmission within a communication network from the
6   general processor to a network processor having a data
7   processor and a control processor   wherein said general
8   processor responsive to the informational frame being a
9   control frame and the control processor being congested
10   designates the encapsulated packet as a data-type packet
11   for processing by the data processor.

1   12.   The system according to Claim 11, further
2   comprising:

3   a network processor coupled to the general processor
4   wherein the network processor comprises a data processor
5   and a control processor; and

6   wherein the general processor sends the encapsulated
7   packet to the network processor.

1   13.   The system according to Claim 12, wherein:

2   the network processor further comprises at least one
3   frame processing unit that receives and decapsulates from
4   the general processor the encapsulated packet and that
5   parses the control frame from the encapsulated packet; and

6   the data processor processes the control frame.

1   14.   The system according to Claim 13, wherein the data
2   processor directs and executes a control command defined
3   within the control frame to a target control processor of
4   a target network processor designated within the
5   encapsulated packet.

1   15.   The system according to Claim 11, wherein the
2   general processor further comprises at least one frame
3   processing unit that encapsulates the informational frame
4   into the encapsulated packet and sends the encapsulated
5   packet from the general processor to the network
6   processor.

1   16. A network processor, comprising:

2   a data processor; and

3   a control processor, wherein the network processor
4   receives and decapsulates an encapsulated packet, that has
5   been transmitted within a communication network from a
6   general processor, into an informational frame and
7   wherein the data processor, responsive to the encapsulated
8   packet being designated as a data-type packet and the
9   informational frame being a control frame, processes the
10   control frame.

1　17.　The network processor according to Claim 16, wherein
2　the data processor parses the control frame from the
3　encapsulated packet.

1　18.　The network processor according to Claim 16, wherein
2　the data processor directs and executes a control command
3　defined within the control frame to a target control
4　processor of a target network processor designated within
5　the encapsulated packet.

1　19.　The network processor according to Claim 16, further
2　comprising:

3　　　at least one frame processing unit that receives and
4　decapsulates from the general processor the encapsulated
5　packet and that parses the control frame from the
6　encapsulated packet.

1   20. A program product for processing network

2   communication from a general processor to a network

3   processor, said program product comprising:

4   a control program that instructs a general processor

5   to encapsulate an informational frame into an encapsulated

6   packet for transmission within a communication network

7   from the general processor to a network processor having a

8   data processor and a control processor and to designate a

9   packet type for the encapsulated packet, wherein

10   responsive to the informational frame being a control

11   frame and the control processor being congested for

12   processing the control frame, said control program

13   instructs the general processor to designate the

14   encapsulated packet as a data-type packet for processing

15   by the data processor; and

16   computer usable media bearing said control program.

1   21.   The program product according to Claim 20, further
2   comprising:

3   said control program instructs the general processor
4   to send the encapsulated packet to the network processor.

1   22.   The program product according to Claim 21, wherein
2   the program product further has another control program:

3   said another control program instructs the data
4   processor to decapsulate the encapsulated packet and parse
5   the control frame from the encapsulated packet; and

6   said another control program instructs the data
7   processor to process the control frame.

1   23.   The program product according to Claim 22, wherein:

2   said another control program instructs the data
3   processor to direct and execute a control command defined
4   within the control frame to a target control processor of
5   a target network processor designated within the
6   encapsulated packet.

1 24. A program product for processing network
2 communication from a general processor to a network
3 processor, said program product comprising:

4   a control program that instructs a network processor
5 having a data processor and a control processor to receive
6 and decapsulate an encapsulated packet, that has been
7 transmitted within a communication network from a general
8 processor, into an informational frame, wherein responsive
9 to the encapsulated packet being designated as a data-type
10 packet and the informational frame being a control frame,
11 said control program instructs the data processor to
12 process the control frame; and

13   computer usable media bearing said control program..

1   25.   The program product according to Claim 24, wherein
2   said control program instructs the data processor to parse
3   the control frame from the encapsulated packet.

1   26.   The program product according to Claim 24, wherein:

2   said control program instructs the data processor to
3   direct and execute a control command defined within the
4   control frame to a target control processor of a target
5   network processor designated within the encapsulated
6   packet.

1 27.   A data structure for network communication within a
2 communication network including a general processor and a
3 network processor having a data processor and a control
4 processor, said data structure comprising:

5   an encapsulated packet which includes at least a
6 destination address field, a source address field, an
7 informational type field, a control-point type field, a
8 target processor field, and an informational frame,
9 wherein the encapsulated packet is transmitted from the
10 general processor to the network processor, and wherein
11 the informational type field indicates a data-type setting
12 if the encapsulated packet is a data-type packet and the
13 control- point type field indicates a control-type setting
14 to designate the informational frame for processing by the
15 data processor.